Genus Zamia.

Zamia furfuracea.—There are two fine old plants in the Botanic Gardens at Cambridge and Chelsea, which are males, and bear cones almost every year. Their stems are short and branched. In the Botanic Garden at Liverpool is a female, which produced a cone in 1848. These three plants agree quite as well with Miquel's description of "*Zamia muricata*, var. *angustifolia*," as with his description of *Zamia furfuracea*.

Zamia integrifolia.—A fine female plant in the Botanic Garden at Cambridge produces a cone every year, and one is now appearing. Five or six bulbs grow from the stem, some of them bearing leaves*.

Genus Ceratozamia.

Ceratozamia mexicana.—A male plant flowered at Chatsworth in 1847, and another of the same sex at Kew. The cone of the last is preserved in the museum. Two fine plants of this species are now flowering at Kew, and there are two in the garden at Chiswick, also in a flowering state. At Kew and Chiswick these plants are called "*Dipsacozamia.*" In these gardens the plants differ so much in the size and form of their leaves, that they may be presumed to belong to some of the four new species preserved at Amsterdam, which Miquel describes in the 'Tijdschrift voor de Wettenschappen,' 1847, p. 38–43. The same observation applies to the Ceratozamias in the conservatory of Mr. Loddiges at Hackney.

ZOOLOGICAL SOCIETY.

Nov. 14, 1848.—Wm. Yarrell, Esq., Vice-President, in the Chair.

Description of a new Genus of Acephalous Mollusca, of the family Pectinacea, collected by Capt. Sir Edward Belcher during the voyage of H.M.S. Samarang. By Arthur Adams and Lovell Reeve, FF.L.S.

Genus Hemipecten.

Hemipecten Forbesianus. *Hem. testâ orbiculari, Anomiæformi, tenuissimâ, hyalinâ, concentricè lineatâ, linearum interstitiis eximiè reticulatis; valvâ inferiore planulatâ, posticè auriculatâ, auriculâ longitudinaliter radiatâ, sinu infra profundo, margine opposito subtiliter denticulato; valvâ superiore convexâ, extus interdum decussatim rugosâ, vix auriculatâ; cardine edentulo, ligamento angusto, marginali, cartilagine parvo solido in cavitatem centralem superficiariam valvis ambabus ligamentum intersecante; pellucido-albâ, valvâ superiore interdum rufo-aurantio radiatâ.*

Hab. Sooloo Archipelago, Eastern Seas.

The subject of the foregoing description, which constitutes an extremely interesting discovery in the acephalous family *Pectinacea*, is an inequivalve shell, partaking of the characters of *Pecten* and *Ano-*

* Four Zamias of other species are now flowering at Kew.

mia. Like *Anomia*, it is a thin, hyaline substance, of which the upper valve is a rude convex plate, distorted according to its situation of growth, but slightly notched on one side. Like *Pecten*, the under valve is characterised by a prominent auricle on the left side, the sinus beneath being very deeply cut in the direction of the hinge-margin, and furnished along the edge with a row of fine erect denticles. The hinge, similar to that of *Pecten*, consists of a slight marginal ligament intersected in the middle by a solid triangular cartilage, situated in the hollow of a superficial depression in each valve. Apparently the nearest approximation to this shell may be found in some of the fossil *Pectens* of the carboniferous limestone, distinguished by a nearer relation with *Anomia*, of which it presents a reversed condition of growth.

From the circumstance of one of the valves being perforated by a deep sinus, of which there is no corresponding growth in the other, it may be compared with *Pedum*, but there is no indication of the umbonal area which characterises the hinge of that genus, and it does not appear to be the production of an animal of the same peculiar habits.

In texture and composition the valves consist of a transparent, semipearlaceous lamina, exhibiting a series of closely-arranged concentric lines, the interstices between which are minutely rayed with much finer lines. If any importance can be attached to the variations in the microscopic structure of shells for the purposes of classification, the observations with which we have been kindly favoured by Dr. Carpenter on the genus, tend rather to show its affinity with *Pedum*. There is some uncertainty in the result. "The flat valve," says Dr. Carpenter, "in both specimens is permeated by copious tubuli, a character in which the species agrees with *Pedum* and with certain species of *Lima*, and differs from *Pecten*. This tubularity exists also in the convex valve of the colourless specimen, but is absent in the other (at least in the portion of it which the Bryozoon covering its surface allows me to examine), and I would direct your attention to the fact that the coloured shell possesses a rudimental sculpturing over the whole of its visible external surface, which is totally wanting in the other. Is not this sufficient as a specific difference?"

The two specimens here spoken of, collected during the voyage of the Samarang, were dredged by Captain Sir Edward Belcher in the Sooloo Sea, from a coral and stony bottom, at a depth of about fourteen fathoms. The under valve of each is smooth, showing it to have been attached; the upper valve, covered in part in both specimens with particles of coral and parasitic shells, is in one individual smooth and colourless, in the other decussately corrugated, delicately rayed with reddish-orange. The two shells so entirely agree in all other respects that we have not ventured to describe them as distinct species.

Trusting that this interesting subject may assist the developmental views of Professor Edward Forbes, we have the pleasure of distinguishing the species by his name.

November 28.—Professor Owen, Vice-President, in the Chair.

The following papers were read:—

1. Descriptions of some new species of Ovulum in the collection of Mr. Cuming. By G. B. Sowerby, Jun.

1. Ovulum umbilicatum (Thes. Conch. pl. 101. f. 88, 89). *Ovul. testâ globosâ, subpyriforme, albâ, roseo pallidè tincto, dorso ad extremitates rubro lineato, ad terminum posticum umbilicato; aperturâ subapertâ; labio externo angustato umbilicato; aperturâ subapertâ; labio externo angustato intùs crenulato posticè labium internum superante; labio interno posticè tumorem elevatum denticulatum ferente, ad canalem lineari, anticè bicostellatâ, ad canalem uniplicato.*

Agreeing with *O. margarita* in general appearance, but the outer lip is thinner, the mouth wider, the upper callosity elevated and denticulated. There is also a small umbilicus behind the posterior termination of the outer lip.

Hab. Ticao, Philippines; by Mr. Cuming.

2 Ovulum lanceolatum (Thes. Conch. pl. 100. f. 35, 36). *Ovul. testâ elongatâ, angustatâ, minutissimè striatâ, aurantio-rubescente, seu albidâ, canalibus subproductis, emarginatis; aperturâ angustatâ; labio externo planulato crasso, breviusculo, anticè angulatim flexuoso; labio interno tumido rubro longitudinaliter marginato, posticè ad canalem producto, subtortuoso, anticè intùs longitudinaliter sulcato, uniplicato, ad canalem angusto, rectiusculo, acuminato.*

A remarkable shell, presenting the appearance of *O. aciculare* very much lengthened. The aperture is narrow, excepting towards the anterior, where the outer lip is bent out: the under surface is flat, the inner lip edged with a reddish line. Collected by Mr. Cuming.

Hab. Sorsogon, Isle of Luzon, Philippines.

There is a white variety of this species (?) from Molucca.

3. Ovulum uniplicatum (Thes. Conch. pl. 100. f. 30, 31, 32). *Ovul. testâ elongatâ, subcylindricâ, pellucidâ, minutissimè striatâ, aurantiâ, seu violaceâ, anticè subacuminatâ, posticè subrotundatâ; dorso margine distincto; aperturâ subapertâ; labio externo paulùm incrassato, ad extremitates recedente, anticè subangulato, ad canalem emarginato; labio interno intùs subdepresso, posticè spiraliter uniplicato, ad canalem tortuo, versus labium externum deflecto, anticè subtortuo acuminato.*

Specimens of the pale violet variety were obtained by Mr. Cuming from near Charleston, South Carolina; a darker one from Rio Janeiro.

This species resembles *O. aciculare*, but is more acuminated at the anterior extremity; it is rather more ventricose, and finely striated. The spiral fold near the anterior canal is more decided and less oblique, and the edge of the canal above it invariably leans towards the outer lip.

4. Ovulum deflexum (Thes. Conch. pl. 100. f. 57, 58). *Ovul. testâ ovali-elongatâ, lævigatâ, albidâ, extremitatibus deflexis; aperturâ angustatâ; labio externo crasso, lato, complanato, anticè arcuato, breviusculo; labio interno longitudinaliter tumido, complanato, posticè uniplicato, anticè ad canalem acuminato.*

Resembling *O. aciculare*, but with a broad, flattened outer lip, and the extremities turned downwards. Brought from Ticao, Philippines, by Mr. Cuming.

5. Ovulum philippinarum (Thes. Conch. pl. 100. f. 57, 58). *Ovul. testâ elongatâ, gradatim rostratâ lævigatâ, fulvâ, subtùs albidâ; aperturâ angustatâ, ad canales truncatâ; labio externo lævi, albo, rectiusculo, anticè angulatim contracto; labio interno lævi, intùs anticè subemarginato.*

The contraction towards the extremities is more gradual, and the outer lip straighter, than *O. birostre*, and the canals are truncated at the extremities. The colour is pale fawn, darkened in the aperture, and nearly white at the lips.

Several specimens were brought by Mr. Cuming from the island of Capul, Philippines.

6. Ovulum subrostratum (Thes. Conch. pl. 100. f. 39, 40). *Ovul. testâ oblongâ, lævi, rubro-violascente, ad extremitates subproductâ, acuminatâ; dorso margine distincto; aperturâ angustatâ, anticè subangulatâ; labio externo lævi, ad extremitates recedente; labio interno tumido, intùs unicarinato, posticè spiraliter uniplicato, ad canales rectiusculo, producto.*

Resembling *O. secale*, but with the extremities more produced and straightened.

From Honduras Bay; collected by Mr. Dyson.

7. Ovulum simile (Thes. Conch. pl. 100. f. 28, 29). *Ovul. testâ oblongâ, ovali, spiraliter striatâ, fulvâ; canalibus subproductis, emarginatis; labio externo crasso, lævi, anticè subarcuato, utrinque breviusculo; labio interno tumido, posticè spiraliter uniplicato, ad canalem subtortuo, acuminato, anticè subdepresso, intùs longitudinaliter unicarinato, ad canalem rectiusculo, acuminato.*

Mr. Cuming's collection; locality unknown.

Resembling *O. secale*, but spirally striated.

2. Descriptions of some new species of Cancellaria in the Collection of Mr. H. Cuming. By G. B. Sowerby, Jun.

1. Cancellaria undulata (Thes. Conch. pl. 92. f. 12; pl. 95. f. 79). *Canc. testâ ovali, lineis undulatis paululùm elevatis cinctâ; costis crassiusculis subnoduliferis; anfractibus subangulatis; aperturâ internè striatâ; columellâ crassâ, granulosâ; colore fulvo, fusco (præcipuè ad angulum anfractuum) interruptim fasciato.*

Hab. Van Diemen's Land. Var. *truncata*, Philippines; H. Cuming.

This species was originally included in the *C. granosa*, Sowerby, Conch. Illustr., but the general aspect of the shell, especially the

banded variety, is so different, owing to the greater fineness of the striæ, that on examining a number of specimens I think they may well be separated.

2. Cancellaria tæniata (Thes. Conch. pl. 95. f. 75, 76). *Canc. testâ elongatâ, turritâ; costis numerosis, transversè striatis, ad angulum anfractuum acutè angulatis; spirâ acuminatâ, apice mammelliferâ; aperturâ internè lævigatâ; margine acuto; columellâ lævi, biplicatâ; colore pallidè fulvo, fusco tæniato.*

Hab. ——? Mus. H. Cuming.

3. Cancellaria melanostoma (Thes. Conch. pl. 95. f. 78). *Canc. testâ ovali, longitudinaliter striis noduliferis et transversè striis alternatis minutè decussatâ; spirâ acuminatâ, anfractibus paucis, rotundatis; aperturâ ovali, magnâ, internè costatâ; labio externo denticulato; columellâ expansâ, anticè granulatâ, triplicatâ; colore pallidè fulvo, fusco latè fasciato; labio externo bimaculato, columellâ fuscâ nigricante.*

The smoothness of the decussating striæ, the more oval form, the peculiar dark colour and granulation of the columella, serve to distinguish this species from the preceding.

Mr. Cuming possesses the only specimen which we have seen. Its locality is unknown.

4. Cancellaria excavata (Thes. Conch. pl. 93. f. 18). *Canc. testâ ovatâ, lævi; spirâ acuminatâ, turritâ; anfractibus ad suturam profundè excavatis; aperturâ breviusculâ, angulatâ, labio externo lævi, internè costato; columellâ triplicatâ, umbilicatâ; colore nullo.*

Hab. South Australia.

It resembles *C. spirata*, but the aperture is shorter in proportion to the spire, and the upper part of the whorls more deeply excavated. The shell is umbilicated behind the columella, and of a white colour.

5. Cancellaria foveolata (Thes. Conch. pl. 103. f. 30, 31). *Canc. testâ oblongo-ovali, turritâ, lævigatâ, obsoletè striatâ; spirâ productâ, anfractibus angulatis, ad suturam excavatis, ad angulum subcoronatis; aperturâ triangulari, lævi; columellâ triplicatâ; umbilico mediocri; colore fusco, vel fulvo tæniato.*

From the sands in Algoa Bay. One specimen is of a uniform brown colour, and the other beautifully lineated.

6. Cancellaria semidisjuncta (Thes. Conch. pl. 95. f. 62, 63). *Canc. testâ ovali, ventricosâ, turritâ, spiraliter sulcatâ; anfractibus angulatis, ad suturam profundè excavatis, ultimo disjuncto; umbilico maximo, costato; aperturâ triangulari, columellâ triplicatâ; colore fulvo, fusco longitudinaliter fasciato.*

Collected by Mr. Cuming in sandy mud, at twenty-five fathoms' depth, at Cagayan, Isle of Mindanao.

3. Description of two species of Mammalia from Caraccas. By J. E. Gray, Esq., F.R.S. etc.

The British Museum have lately purchased from M. Sallé, through Mr. Cuming, a Monkey and a Squirrel, which appear to have been

hitherto unnoticed in the catalogues; I have therefore sent a short description of them to the Society.

Mycetes palliatus (Mantled Howler).

Black brown; hair of the middle of the back and upper part of the sides yellow brown, with black tips; of the lower part of the sides elongate brownish yellow, forming a kind of mantle on each side.

Hab. Caraccas.

The hair of the forehead short, reflexed, forming a slight crest across the middle of the head; of the back of the head rather longer; of the cheeks few, scattered, short and greyish; of the hinder part of these rather longer than those on the rest of the head, and forming a slight beard, which is more distinct in the males; the lower part of the hairs on the shoulders is sometimes yellowish.

Sciurus dorsalis (Black-backed Squirrel).

White, hairs black, with, more or less, long white tips; the eyebrows, back of the head, nape and middle of the back brownish black, forming a very broad, well-defined dorsal streak.

Hab. Caraccas.

The black of the hairs of the sides of the body and tail show through the general white colour; the black occupies all except the tip of the hairs. The hairs of the lower part of the legs and feet are white to the base; ears rounded, not bearded, and with scattered hairs.

This may be only a variety of some other American species, but the two specimens which were sent home were exactly alike.

4. Description of a new species of Herpestes, from Abyssinia. By J. E. Gray, Esq., F.R.S. etc.

Mr. F. H. Hora having kindly presented to the Museum a specimen of a male Herpestes which he lately caught in Abyssinia, and as it is different from any of the species of the genus described by Dr. Rüppell in his Fauna of that country, original specimens of which are in the British Museum collection, I have the pleasure of laying a short description of it before the Society.

Herpestes ochraceus (Ochraceous Herpestes).

Pale brownish yellow, very minutely mixed or punctated with a darker tint; chin, throat and under part paler, not punctated; end of tail bright yellow, with an elongated black tip.

Hab. Abyssinia.

The hair of the back short, yellow, with a short blackish base and a narrow dark brown subterminal band; of the throat and under part of the body longer uniform pale yellow, with a short dark band at the base; of the lower half of the tail longer pale yellow, with three or four rather narrow, equidistant darker bands; of the end of the tail uniform bright yellow, and of the hinder end all black, forming a terminal tuft. Ears rather large, rounded, covered with short close-pressed hairs. The soles of the hind-feet bald to the heels.

The skull is rather elongate and narrow; the false grinders are 3–3,

the first being very small and conical; the third are subtriangular, with a slight tubercle on the inner side: the orbit not quite complete, but with a short interruption in the middle of the hinder side.

Length of skull $2\frac{1}{12}$ inches, width $\frac{11}{12}$; length of palate $1\frac{1}{15}$ inch; of face from front of orbit $5\frac{1}{2}$ lines; of lower jaw 1 inch $3\frac{1}{2}$ lines.

5. Description of a new species of Cinclosoma. By J. Gould, Esq., F.R.S. etc.

Cinclosoma castaneothorax, n. sp.

Sp. Ch.—Crown of the head, ear-coverts, back of the neck and upper tail-coverts brown; stripe over the eye and another from the base of the lower mandible, down the side of the neck, white; shoulders and wing-coverts black, each feather with a spot of white at the tip; all the upper surface, the outer margins of the scapularies, and a broad longitudinal stripe on their inner webs next the shaft, deep rust-red; primaries, secondaries, and the central portion of the scapularies dark brown; tail black, all but the two central feathers largely tipped with white; chin and throat black; chest crossed by a band of rich rust-red; sides of the chest and flanks brownish grey, the latter blotched with black; centre of the abdomen white; under tail-coverts brown, deepening into black near the tip, and margined with white; bill and feet black.

Total length, $8\frac{1}{2}$ inches; bill, 1; wing, 4; tail, $4\frac{1}{4}$; tarsi, 1.

Hab. Darling Downs, New South Wales.

Remark.—Nearly allied to *C. castanotus* and *C. cinnamomeum*, from which it is however easily distinguished by the colour of the chest and back.

Dr. Macdonald communicated orally his ideas on the Vertebral Homologies as applicable to Zoology, of which observations he has furnished the following abstract:—

"Dr. Macdonald gave a short sketch of the characters of the typical vertebra, as proposed by Professor Owen and several continental zoologists and comparative anatomists, and then contrasted it with one which had been the result of many years' study, and which he considered more in accordance with the vertebra and its autogenous and exogenous elements as traceable in the endoskeleton of the Vertebrate classes, and also as showing its analogy in the Annulose animals. The table which he exhibited points out these, from which it would appear that Dr. Macdonald considers the bodies of the vertebræ, as described by anthropotomists,—continued downwards through the sacrum and coccyx to the top of the tail, and the basilar process upwards to the sella turcica,—as so many portions or segments of a central axis formed around a centrochord,—and not a notochord as usually described,—from which the autogenous elements spring and radiate to the periphery, and, converging mesially along the dorsal aspect, enclose within the tunnel of the *Neuro-Camera* the whole cerebro-spinal axis, of varying dimensions in the different regions, and another set of radii meeting sternally, and forming the three

thoracic regions, having a costal region interposed. The Rachedian development from the sella turcica to the tail, with its mesothorax and metathorax, is the longest, and forms the Rachal type; the anterior towards the nose—the facial or proboscidian—is the shorter, and has only one thorax, the cephalothorax, formed by the mandibular costæ and palatine sternum.

"This framework, like a large trunk, is enclosed by three cycloid or segmental zones:—

1. The *Temporal*, formed by the squamo-temporal, zygoma and malar bones, and supporting its membral or epicycloid *ramus*, formed by the maxilla.

2. The *Humeral* or scapular clavicle and manubrium sterni, with its *epicycloid ramus*, the brachium, cubit and carpodactyle portions.

3. The *Coxal* or ilio-pubic, with its epicycloid ramus, femur, crus and tarso-digital portions.

"In so extensive a subject Dr. Macdonald restricted his present communication to the consideration of a portion of the epicycloid ramus of the metathoracic or coxal zone, and pointed out the strong analogy which might be traced between the tarsus and the bones of the arm in the human skeleton, in order to facilitate the examination of the same organs in the lower classes, and more especially in the osseous fishes, where, from an early prejudice, resulting from what appears to Dr. Macdonald as the hasty observation of preceding observers, it has long been overlooked and considered as the homologue of the pectoral limb. This great error has rendered the whole subject confused and complicated, and has given rise to many of what Dr. Macdonald considers the extravagances of Geoffroy St. Hilaire and his followers in the French school, and constrained them to mistake the true respiratory or humeral epicycloid ramus, and superadd to this class the additional zone and membral ramus, under the vague idea of its being greatly developed tympanic bones; whereas, had they seen the analogy of the human tarsus and carpus, they never would have mistaken the tibia for the scapula or brachia, or the calcis for the ulna, and the scaphoid for the radius; and had they even examined the higher or cartilaginous fishes, they would have seen the opercular bones removed somewhat further down the trunk, and the pelvic or coxal zone and epicycloid ramus more distant. This would have led Professor Owen not to have considered the posterior extremity or coxal zone and limb as the divergent appendages of the occipital vertebra. As to the homologies of these parts, the Doctor postponed the consideration of them till another opportunity, and proceeded simply with the tarsus. This consists in Man and many mammals of seven bones, which are arranged in two rows; each row has developed from it one or more digital phalanges when most developed; with the first row the thumb or great toe is developed, while the other toes having metatarsal and digital phalanges are connected with the anterior row or distal end of the tarsus, where the tarsal bones are fused or developed in a single bone. This is beautifully seen in many of the birds, especially the Cursores and Grallatores: in the Apteryx, as figured in the 'Zoological Transactions' by Prof.

Owen, vol. iii. pl. 49, the tarsus is seen to consist of a single bone, terminating in three distinct knuckles, for the articulation with the metatarsal phalanges; while the thumb is seen with its different joints on the posterior and inner aspect, and in its natural position. This part of the leg has long been mistaken by ornithologists: Prof. Owen calls it tarso-metatarsal, and Dr. Melville views it as the metatarsal, which Dr. Macdonald asserts is surely more erroneous than even Prof. Owen's view.

"The thumb or great toe very often disappears in the endoskeleton, but may sometimes be seen in the exoskeleton, as in the leg of the Horse and some other mammals, where the metatarsus is fused into a single or shank-bone, terminating in a single phalanx as in the Horse, or double phalanx as in the Llama.

"Dr. Macdonald also briefly alluded to the nomenclature adopted by entomologists and other annulose zoologists, and maintained, that if the nomenclature of the anatomist was to be appropriated by them, they were bound to use the terms anatomically; and then submitted the following sketch of the homologies of the posterior leg:—

Coxa = Cotylon.
Trochanter = Femur.
Femur = Tibia.
Tibia = Tarsus and great toe.
Tarsus = Metatarsus and phalanges.

"These homologies are easily traceable in all the six legs of the Entomoid classes, and also in the thoracic legs of the Crustacea, and are particularly well-marked in the large claw of the Crab, where the lines and markings point out the metatarsal and digital phalanges, terminating in the large claw; where the thumb or opposable claw is jointed to what may be viewed as homologous to the tarsus, while the rest is the fused terminal phalanges."

The communication was also accompanied with a verbal explanation of the several diagrams exhibited.

December 12.—R. C. Griffith, Esq., F.G.S., in the Chair.

The following papers were read to the Meeting:—

1. On the Habits of a living specimen of Nanina vitrinoides (Desh.). By H. E. Strickland, F.G.S.

On the 2nd of December, 1847, Capt. W. J. E. Boys presented me with three specimens of a terrestrial mollusk, named *Nanina vitrinoides*, by Mr. Gray (P. Z. S. pt. 2. p. 58; *Helix vitrinoides*, Desh.). Capt. Boys had procured them a considerable time before, certainly not less than a year, in the district of Ajmeer in Upper India. The animals still remained within the shells, but from the length of time during which they had been kept dry they were greatly reduced in bulk, and had almost wholly retired from the outer volution, as was easily seen from the transparency of the shell. Like many of the *Helicidæ* of hot climates, especially those which are exposed to long intervals of drought, the *Nanina vitrinoides* secretes a calcareous *poma*, or deciduous operculum, every time that it retires into a state of

torpor. The specimens in question had formed two or three successive *pomata*, one within the other, during the process of their desiccation.

In hopes of restoring their animation, I placed them upon some wet moss in a warm room. Two of them proved to be past recovery, but the animal of the third was seen through the transparent shell to be gradually enlarging in bulk by the absorption of moisture, and at the end of a week it finally reached the door of its dwelling, threw off the *poma*, and began to crawl. A morsel of boiled carrot was presented to it, which it greedily devoured, and speedily increased in health and vigour. I have now kept this interesting creature a twelvemonth, and have often been tempted to exclaim with Oken, "What majesty is in a creeping snail; what reflection, what earnestness, what timidity, and yet at the same time what confidence! Surely a snail is an exalted symbol of mind slumbering deeply within itself."

Since its revival my *Nanina* has greatly increased in size, and has added half a volution to its shell, which now measures $\frac{7}{10}$ inch in diameter. Its favourite food is boiled carrots and raw lettuce-leaves. It generally remains quiet during the day, but crawls forth and shows considerable activity in the evening, and has never shown any inclination to hybernate or become torpid for a lengthened period.

The shell of *Nanina vitrinoides* is brown, glossy and pellucid, and in shape and colour closely resembles the shells of the European genus *Zonites*, from which, without examination of the animal, it seems to be generically undistinguishable. The animal however is very different, and is more allied to, though quite distinct from, that of the genus *Vitrina*. The foot, when contracted, is too large to be withdrawn into the shell, except after a considerable period of desiccation. When expanded, and at full stretch, the foot is remarkably long and narrow, measuring about two inches in length and $\frac{1}{5}$ inch in breadth. The hinder extremity is abruptly truncate, surmounted by a short horn-like appendage, similar to that in the larvæ of certain Lepidopterous genera. But the most peculiar character in the animal of *Nanina* is that of the two elongate pointed lobes or flaps which project from the margin of the mantle, one on each side of the mouth of the shell. These lobes possess a certain amount of lateral motion, and a considerable power of retraction and expansion, but are always kept in close contact with the surface of the shell.

The animal is in the frequent habit of performing the following singular operation, which, as far as I am aware, has not before been noticed in any terrestrial mollusk. Crawling to the top of its prison (which consists of an inverted tumbler, with a small aperture for air), it suspends itself to the glass by the hinder half of the foot, and twists the anterior part round, so as to bring its lower surface into contact with the shell. By the great length and flexibility of the anterior half of the foot, it is enabled to twist in a variety of directions, and thus to crawl as it were over every part of its own shell in succession, the hind-part of the animal remaining all the while firmly attached to the surface of the glass. During this operation the

horns are partially contracted, and the mouth of the animal is applied closely to the shell, and is seen to be alternately expanded and contracted, as if in the act of suction. In fact the whole process closely resembles the action of a cat when licking its feet and body, and is performed with just the same appearance of systematic determination. The object of this operation is no doubt the same in both animals,—that of clearing their persons from extraneous matter, and producing that aspect of cleanliness and beauty which is one of the laws of organic nature in its normal state. Hence that brilliant gloss which distinguishes the shell of the mollusk here referred to.

It would be desirable to ascertain whether any analogous habit is possessed by the allied genera *Vitrina* and *Zonites*. The shells of the British species of *Zonites* (*Z. nitens, alliacea, cellaria,* &c.) closely resemble *Nanina vitrinoides* in form, colour, and glossiness of surface, and their brilliancy must apparently be due to some polishing action similar to that here described. On the other hand, it is difficult to understand how the animals of *Zonites* and *Vitrina*, whose foot is much broader and shorter than in *Nanina*, should be able to reach every part of their shell and to purify its surface.

The animal of *Nanina vitrinoides* is of a deep cinereous, the mantle yellowish, its lateral projecting lobes darker, the under surface of the foot pale grey, with a yellowish stripe along each side.

2. Description of two new species of Crustacea. By Adam White, F.L.S., Assistant Zool. Dept. Brit. Mus.

Cancer (Galene) dorsalis, White, n. s. *C. pallidè carneus hepatico-rubris punctulis confertim sparsus, thorace maculâ magnâ hepaticâ dorsali, mediâ, anticè angulatâ, posticè rotundatâ; thorace parte posticâ dimidiatâ immaculatâ; pedibus carneolo-suaviter variegatis; pedibus penultimis longissimis; chelis magnis, pallidis, supernè punctulis hepaticæ sparsis, subtus et infra immaculatis; fronte planâ, medio duobus tuberculis, thorace, lateribus anterioribus, tuberculis quatuor minime elevatis.*

This singularly pretty species was sent home by Mr. John MacGillivray, the naturalist attached to Capt. Stanley's expedition: its beautiful dotted surface, the large liver-coloured mark on the middle of its carapace, and the great length of the penultimate pair of legs, as well as its semi-nodose, semi-crenate, latero-anterior edge, well determine it.

Squilla multicarinata, White, List of Crustacea Brit. Mus. *S. thorace, et segmentis abdominalibus, multis carinis, sæpè parallelis, carinâ singulâ, posticè productâ in spinam brevem; ordinibus duobus carinarum utriusque lateris, paulò majoribus.*

This species comes in the second section of M. Edwards, and in his first subsection of it, in which the rostral plate does not cover the ophthalmic ring: the very numerous nearly parallel crests on each segment of carapace and abdomen, each crest produced slightly behind into a spine, at once indicate its distinctness from all *Squillæ* with the description of which I am familiar. Two specimens were

found in the Philippine Isles by Mr. Cuming (an indefatigable Fellow of this Society), and one, but a very small and badly-preserved one, was obtained on the voyage of H.M.S. Samarang, in Nangasaki Bay in the Eastern Seas.

MISCELLANEOUS.

GALLINAGO BREHMI.

Two specimens of *G. brehmi* have been shot at Jardine Hall on the 9th and 10th of October, being the first time that this species has been noticed as visiting our islands. We have no doubt that it has hitherto been overlooked, but one distinction is very easily noticed. On comparing the tail with that of the common snipe, it will be seen that the outline of the latter is rounded, while in *G. brehmi* the outer feather exceeds the length of the second. At this season of winter migration we would invite sportsmen to attend to the finding of this bird.—W. J.

Jardine Hall, Oct. 11, 1849.

MR. WILLIAM MACCALLA.

It is too often our painful duty to record the loss of some naturalist who has shown himself well qualified to advance science, had he been spared to us, but who is called away in the prime of life. Such is now our position, since we have to announce the death of Mr. W. MacCalla, the well-known young Irish naturalist. We had the pleasure of forming an acquaintance with him many years since in his native district of Conamara in the county of Galway, and then recorded his promise of distinction in the journals of the day. At that time he had only commenced his career by making himself acquainted with the zoology and botany of that wild country, and we believe that his first discovery of note was the heath afterwards named, at the desire of Sir W. J. Hooker, *Erica Mackaiana*, in compliment to our distinguished friend Dr. J. T. Mackay, who was, we believe, poor MacCalla's first master in botany, and who had kindly encouraged him in his early and otherwise unassisted course of study.

We cannot do better than by adopting the language concerning him of Dr. W. H. Harvey, who speaks of him as follows in his beautiful 'Phycologia Britannica' (cclxiii.) when describing an Alga (*Enteromorpha Hopkirkii*, MacCalla) named by him. His words are—

"In now adopting Mr. MacCalla's specific name I wish to record the regret I feel, in common with all naturalists acquainted with his merits, that death should so soon have closed a career which opened with so much promise of future fame. The readers of the 'Phycologia' must be well acquainted with the name of Mr. William MacCalla, in connection with the habitats of many of our rarest Algæ. It is therefore almost superfluous to say that he was well acquainted with the species, and had a most acute eye to detect a minute spe-